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Copy No. 3 of 10

9 July 1965

MEMORANDUM FOR: Deputy Director (Intelligence)

SUBJECT: Communist China's Capability to Produce Aircraft
Fuels*

1. Based on estimates of the number of aircraft and the level of operational activity in Communist China, current demand for jet fuel probably is about 340,000 tons per year, equivalent to a rate of about 6,800 barrels per day (bpd).** Demand for aviation gasoline (avgas) probably is about 55,000 tons per year (1,100 bpd).***

2. Communist China is not now self-sufficient in either type of aircraft fuel. We estimate that in 1964, China imported a total of 700,000 tons of various petroleum products, principally from the USSR, including about 325,000 tons of jet fuel and 55,000 tons of avgas; domestic production of petroleum products was about 6 million tons. Data on imports in the first half of 1965 are incomplete; while no imports of petroleum from the USSR have been observed in 1965, imports from Rumania have included 27,000 tons of jet fuel and 6,000 tons of avgas. Since most of the inventory of military aircraft in China is jet powered, the importance of aviation gasoline is small and of declining significance.

3. Because China is not self-sufficient in the supply of aircraft fuels, it is unlikely that it could provide for the meager needs of

* This subject was treated in considerable detail in CIA/RR CB 63-56, same subject, 24 June 1963, [] and was also discussed in CIA/RR ER SC 64-2, Prospect for Chinese Communist Self-Sufficiency in Petroleum, 9 October 1964, [] Related aspects of China's oil economy were treated also in CIWR, 14 May 65; CID, 27 Oct 64; CIB, 14 Aug 64; CIWR, 28 Feb 64.

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** Metric tons per year divided by 50 equals approximately barrels (42 US gallons) per day.

*** The estimates of demand in this paragraph are for internal use only; they are the same as the latest available DOD estimates -- for the year 1963. They are for all aircraft, including civil air and military training.

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North Vietnam without aggravating its own supply situation. The USSR continues to be the principal source of supply of petroleum, including aircraft fuels, to North Vietnam, although token shipments of motor gasoline and diesel fuel oil were made from China in 1964 and 1965 (at a time when China was also importing these products).

4. We estimate that Communist China has the capability to produce jet fuel and probably now produces, from domestic sources, an indeterminate but significant share of its supply. Production of jet fuel, however, is at the expense of the domestic output of kerosene, since both products are derived from the same general fraction of the crude oil. China now imports some kerosene as well as jet fuel.

5. Communist China does not have the sophisticated refining process facilities considered essential to the manufacture of high-grade avgas and continues to import this type product.

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b. China may have blended imported avgas with domestic gasoline base stocks to yield "domestically produced aviation gasoline." The avgas (grade 115/145) imported from Iran at the end of 1964 is superior in quality to avgas previously available, or currently required, in China. This material could be blended with locally-produced gasoline base stock to yield increased quantities of avgas grade 95/130, the type normally used in China.

c. It is conceivable also that China is compounding avgas by blending domestically-produced gasoline base stock with imported avgas components. Communist China does not

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[redacted]

now have refining process facilities -- catalytic cracking, alkylation, or catalytic reforming -- considered to be essential to the manufacture of high-grade avgas. There is no evidence that the catalytic cracking unit designed and built by the USSR (at about the time the Soviet technicians departed China) at the Lanchow Refinery has ever operated as a cracking unit. As late as mid-1964, China was making inquiries in the Free World about the procurement of catalyst for this unit. In any event, the availability of catalytic cracking without the products of either alkylation and/or reforming facilities would not, of itself, give China the capability to produce high-grade avgas. A catalytic reformer purchased from Italy will not be operational before 1966. Nor does China produce tetraethyl lead (TEL), an anti-knock additive essential to the manufacture of high performance avgas. Communist China continues to import TEL and the products of alkylation and reforming processes. [redacted]

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[redacted] Iso-octane, a product of the alkylation process, was imported from the UK in mid-1963. Xylene, a product of the reforming process, was imported from Rumania as late as October 1964 and from Japan as late as June 1965. Toluene, also a product of the reforming process, was imported from these two countries during similar periods. Although xylene and toluene have other industrial applications, it is possible that these materials are being used in combination with locally-produced gasoline base stocks to yield avgas.

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